Filing Date: August 18, 2003
Title: Dynamic load distribution within a session initiation protocol network

REMARKS

The Office Action mailed October 1, 2008 has been carefully considered. Reconsideration and allowance of the subject application, as amended, are respectfully requested.

The withdrawal of the finality of the previous Final Office as a result of Applicants' Pre-Appeal Brief filed November 16, 2007 is noted with thanks.

Claims 1-21 are currently pending, claims 22-24 having been previously cancelled. No claims have been added or cancelled by this Amendment. The claims have been amended to clarify the claimed subject matter. Additionally, it is believed that the Examiner's rejection of claims 8-9, as amended, under 35 USC §112, second paragraph (at pages 2-3 of the Office Action), is not warranted, and should be withdrawn. Support for the within claim amendments may be found at, *inter alia*, page 8, lines 5-14 and page 10, lines 14-22 of the Specification.

In making the within claim amendments, Applicants are clarifying the claimed subject matter and are not acquiescing as to the validity and/or correctness of the rejections of the subject application made by the Examiner in the Office Action. The within claim amendments are not intended to, and do not result in disclaimer, waiver, and/or estoppel vis-à-vis claim scope and/or equivalents.

In the Office Action, the Examiner has rejected Claims 1-3 and 7-21 under 35 U.S.C. § 103(a) as being unpatentable over Gourraud et al. (U.S. Pub. No. 2004/0037407) in view of Daoud et al. (U.S. Pub. No. 2002/0087694). The Examiner has also rejected Claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Gourraud et al. (previously cited) in view of Daoud et al. (previously cited) and further in view of Armbruster et al. (U.S. Pat. No. 6,243,760). Additionally, the Examiner has rejected Claims 5-6 under 35 U.S.C. § 103(a) as being unpatentable over Gourraud et al. (previously cited) in view of Daoud et al. (previously cited), Armbruster et al. (U.S. Pat. No. 7,280,482). Applicants respectfully submit that these rejections of the claims, as amended, cannot be maintained, and should be withdrawn

All claim limitations must be considered material in judging the patentability of the claims against the prior art. MPEP §2143.03; *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976); *In re Wilson*, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970). Anticipation under 35 USC

Title: Dynamic load distribution within a session initiation protocol network

§102 requires that each and every limitation of the allegedly anticipated claim be identically taught in a single unit of prior art. MPEP §2131. Furthermore, in determining the differences between the prior art and the claims, the question under 35 USC §103 is not whether the differences themselves would have been obvious, but whether the claimed combination of limitations, as a whole, would have been obvious. MPEP §2141.02; In re Hirao, 535 F.2d 67, 190 USPQ 15 (CCPA 1976). Rejections based on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with factual rationale to support a prima facie case of obviousness. In order for that reasoning and rationale to be proper, among other things, all of the claim limitations must be taught or suggested in the art relied upon by the Examiner. MPEP §2141 III; KSR International v. Teleflex Inc., 550 U.S. _____, 82 USPQ2d 1385 (2007).

Gourraud et al. discloses techniques for multi-party conference calling. Significantly, the Examiner acknowledges that "Gourraud fails to disclose where the Q-value is an integer value based on both (1) a contact priority and (2) a number of calls or an amount of information being processed for a call." Office Action, page 4.

The Examiner relies upon Daoud et al. as disclosing the above features that the Examiner acknowledges to be missing from Gourraud et al. More specifically, the Examiner cites paragraphs 38-41 and 53 of Daoud et al. as disclosing these features. These portions of Daoud et al. are reproduced below:

[0038] The server index 400 (FIG. 4) is preferably a multi-dimensional array (e.g., a database or "lookup table") stored in a memory accessible by the load balancer 300. The server index 400 includes at least a server identification (ID) 410 and a corresponding service level 420 for each server 311, 312, 313 in the server pool 320 that is managed by the load balancer 300. The server ID 410 can be the server IP address, a path, or any other suitable means that the load balancer 300 can use to identify a server 311, 312, 313 and direct a transaction 200 thereto. Other data related to the various servers can also be included in the server index, such as that status of a particular server (e.g., availability, current load), alternative or backup servers or server pools, etc.

Title: Dynamic load distribution within a session initiation protocol network

[0039] The service level 420 can be any suitable indicator, such as but not limited to a number on a scale of one to ten, a category of service, the time (e.g., weekday or weekend), a user identification (e.g., user1, user2, administrator), a transaction type (e.g., email, video), a combination thereof, etc. Furthermore, the service level can be based on information about the monitored servers obtained by polling the servers, predefined service specifications, etc. Likewise, the servers can be ranked relative to one another, relative to the types of transactions processed, etc.

[0040] When the transaction 200 is received by the load balancer 300, the service tag 220 is read using suitable program code. The load balancer 300 then accesses the server index 400 to determine (e.g., using suitable program code) the server in the server pool 310 that can best provide the requested level of service associated with the transaction 200 (i.e., as indicated by the service tag 220). For example, where the service tag 220 indicates a requested level of service having a scale value of "50", the server index 400 indicates that server 312 (Server B) is providing a corresponding service level 420 having a scaled value of "51", while the other servers 311 and 313 are providing lower levels of service. Hence, the load balancer 300 directs the transaction to server 311 (Server B), as shown in FIG. 3. As another example, where the service tag 220 indicates the requested level of service is a scaled value of "25", the load balancer 300 directs the transaction 200 to server 313 (Server C), which is providing a corresponding service level 420 having a scaled value of "27", as indicated by the server index 400.

[0041] It is to be understood that the term "best", as that term is used herein with respect to the server best able to provide the requested level of service, is defined to mean "best as determined by the program code of the load balancer", and may be interpreted by a load balancer as, for example, "nearest" or "meeting" the requested level of service. Thus, even where the requested level of service and the service level actually being provided are at opposite ends of a spectrum (e.g., the requested level of service is a scaled value of "50" but the

service levels being provided by the servers range from scaled values of "5" to "10"), the server providing the service level nearest to that requested (e.g., a service level having a scaled value of "10") is considered to be "best" able to provide the requested level of service. However, it is also to be understood that where the disparity between the requested level of service and the service level being provided is unacceptable (i.e., based on a predetermined level of acceptability, such as more than "10" scale values difference), the load balancer 300 can direct the transaction to the server best able to provide the requested service level, but also return a warning signal (e.g., an email, an error message, etc.) to the requester (e.g., an administrator, the user, the originating application, etc.) notifying the requestor of the disparity. Alternatively, the load balancer 300 can redirect the transaction 200 to another load balancer that is monitoring another pool of servers, the load balancer 300 can "bounce" the transaction 200 altogether, etc.

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[0053] It is understood that the service tag 220 may be assigned to the transaction 200 at any number of points, and FIG. 9 is merely intended to be an illustration thereof. Other examples include assigning the service tag 220 to the transaction 200 by an intermediary computer, a gateway, a load balancer, etc. Another example may include dynamically assigning the service tag 220. That is, the service tag 220 may be assigned to the transaction 200 at the originating application 910, then appended at the operating system 925, and further changed at a router 935 and/or 945 on the network 930 and/or 940 before the transaction 200 reaches the destination. More specifically, the user may request a level of service of "high priority" for a transaction 200 via GUI 905. The operating system 925 may subsequently append a backup level of service of "medium priority" to the transaction 200. A router 935 and/or 945 that receives the transaction 200 while handling a heavy load from a high priority user (e.g., an administrator), may then change the requested level of service to "best available". As such, the service tag 220 need not be statically assigned. Daoud et al., paragraphs 38-41 and 53.

Title: Dynamic load distribution within a session initiation protocol network

Armbruster et al. discloses an information dissemination system. Heiner et al. discloses load distribution techniques using local state information. Suffice it to note that none of the four documents relied upon by the Examiner can be said to disclose or suggest the features of Applicants' claim 1, as amended, namely:

A method of communicating load, comprising:

determining a load on a first node;

factoring the load into a session initiation protocol (SIP) Q-value for the first node, where the Q-value is an integer value based on both (1) a contact priority and (2) a number of calls or an amount of information being processed for a call;

transmitting the Q-value to a second node via one or more load brokers where each load broker is a back-to-back user agent; and

determining a domain load factor for a domain that comprises a plurality of SIP entities, the domain load factor indicating domain load for the entire domain, the domain load factor to be shared with other domains and to be used with the O-value to determine call routing. (Independent claim 1, as amended).

All of the currently pending independent claims, as amended, contain the above underlined limitations of claim 1, as amended, or substantially similar limitations. Thus, all of the currently pending claims, as amended, contain the above underlined limitations of claim 1, as amended, or other substantially similar limitations, either directly, or by depending from one of the independent claims. 35 USC §112, fourth paragraph.

These differences between the documents relied upon by the Examiner and Applicants' claimed invention are not merely academic. For example, although the limitations in the claims, as amended, are not limited to or bound by embodiments disclosed in the Specification, in an embodiment disclosed in the Specification, these features of the claimed invention that are not disclosed or suggested in the documents relied upon by the Examiner permit this embodiment to

operate in a manner that is different from, and to achieve advantages compared to the technology disclosed in these documents. (See, e.g., Specification, page 10, lines 14-22).

Accordingly, since these advantageous features of the claimed invention are nowhere disclosed or suggested in any of the documents relied upon by the Examiner, it is respectfully submitted that none of these documents, taken singly or in any combination, anticipates or renders obvious the claimed invention. Therefore, it is respectfully submitted that the Examiner's rejections of the claims, as amended, under 35 USC § 103 as being rendered obvious by combinations of Gourraud et al., Daoud et al., Armbruster et al., Heiner et al. cannot be maintained, and should be withdrawn.

In the event that the Examiner believes that a telephone interview would advance the prosecution of this application, the Examiner is invited to call the undersigned attorney to initiate an interview.

In the event that any fees are due or payable in connection with this submission or in this application (including any applicable extension of time for response fees) please charge them to Deposit Account No. 50-4238. Likewise, please credit any overcharges to Deposit Account No. 50-4238.

Respectfully submitted,

Customer Number: 76973

Date: December 11, 2008

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